

**Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal**

Section 1. General administrative information

Yakama Nation - Riparian/Wetlands Restoration

Bonneville project number, if an ongoing project 9206200

Business name of agency, institution or organization requesting funding
Yakama Indian Nation

Business acronym (if appropriate) YIN

Proposal contact person or principal investigator:

Name Tracy Hames
Mailing Address P. O. Box 151
City, ST Zip Toppenish, WA 98948
Phone (509) 865-6262
Fax (509) 865-3619
Email address yinwild@wolfenet.com

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Ducks Unlimited	3074 Gold Canal Dr.	Rancho Cordova, CA 95670	Andy Engelis

NPPC Program Measure Number(s) which this project addresses.

11.3F.5 - Ongoing Wildlife Mitigation projects, 7.6 - Habitat Goal, Policies and Objectives

NMFS Biological Opinion Number(s) which this project addresses.

N/A

Other planning document references.

Wy Kan Ush Me Wa Kush Wit (1997), Yakima Watershed Council 20/20 Vision for the Yakima Basin (1997), Yakima Basin Focus Area Plan of the Intermountain West Joint Venture of the North American Waterfowl Management Plan (1997), Yakima River Basin Water Enhancement Plan (1993), Yakama Nation Wetlands/Riparian Plan (1994),

Subbasin.

Yakima Basin

Short description.

Continue implementation of YIN Wetlands/Riparian Restoration Project by protecting and restoring riparian and wetland habitat along anadromous fish bearing rivers and streams in the agricultural area of the Yakama Indian Reservation (~2,500 acres /year).

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
+	Anadromous fish	+	Construction	+	Watershed
+	Resident fish	+	O & M		Biodiversity/genetics
X	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research	+	Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt		Fish disease
		+	Planning/admin.		Supplementation
			Enforcement	X	Wildlife habitat en-
		X	Acquisitions		hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Secure available restoration	a	Determine land ownership (YIN or

	priority area properties (2,000 - 3,000 acres per year)		non-YIN). This task was completed in 1994.
		b	Secure land in perpetuity with appropriate procedure outlined in project implementation plan (purchase, easement or lease).
2	Protect, restore and/or enhance secured lands to realize a net increase in wildlife habitat values.	a	Develop site-specific restoration plan for secured property according to procedures outlined in Project implementation plan.
		b	Implement site-specific restoration activities identified in Task 2a.
3	Adaptively manage properties to ensure permanent wildlife habitat value.	a	Develop site-specific operations and management plan.
		b	Manage habitats according to site-specific plans.
		c	Adjust management according to results achieved in monitoring activities.
4	Monitor wildlife habitat conditions to ensure the desired mitigation level is reached and maintained.	a	Perform baseline and periodic HEP analyses to measure habitat responses to management activities and to monitor mitigation levels achieved.
		b	Develop and perform habitat response monitoring according to restoration goals set out in the site-specific management plans.
		c	Perform wildlife surveys on selected populations to ensure that habitat responses are resulting in wildlife responses.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	10/1992	9/2020	60.00%
2	6/1993	9/2022	25.00%
3	6/1993	12/2052	8.00%
4	6/1993	12/2052	7.00%
			TOTAL 100.00%

Schedule constraints.

The level of funding achieved has been the only constraint on this project. Presently there is more land available for inclusion into the project than there are funds allocated on an annual basis.

Completion date.

The project is defined as ongoing in perpetuity (for the life of the hydroprojects).

Section 5. Budget***FY99 budget by line item***

Item	Note	FY99
Personnel	2 Professional FTEs, 6.5 Technician FTEs	\$259,809
Fringe benefits	25.3%	\$65,732
Supplies, materials, non-expendable property	Office supplies, computers, bldg. lease, etc.	\$13,700
Operations & maintenance	Fence repair, tools, etc.	\$86,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Land purchase (~2,000 acres), farm equipment	\$1,176,694
PIT tags	# of tags:	
Travel		\$5,000
Indirect costs	23.6% of budget excluding capital purchases and construction	\$126,065
Subcontracts	Engineering plans, etc.	\$10,000
Other	M&E, Insurance	\$7,000
TOTAL		\$1,750,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000
O&M as % of total	10.00%	13.00%	16.00%	19.00%

Section 6. Abstract

This project has been designed to restore wetlands and riparian habitats along anadromous fish-bearing streams on the Yakama Indian Reservation. Overall goals include the protection, restoration and management of 27,000 acres of floodplain lands along the Yakima River, Satus and Toppenish Creeks. Direct mitigation is being realized for losses identified in the 1994 Columbia Basin Fish and Wildlife Program relating to

the construction of the lower 4 Columbia River Dams. Extensive partnership and cost-share components provide extensive savings to this Project.

Land securing methods include purchase, easement, or long-term lease depending on the nature of the land ownership and the cost-effectiveness of the activity. Approximately 2,000 - 3,000 acres are secured each year. Restoration activities seek to restore historic conditions. Land disturbing activities are subject to cultural and archaeological surveys, and are used only on properties which have suffered past disturbances. Native vegetation re-establishment, and a return to some semblance of historic hydrology are the goals on the restoration sites. Restoration efforts are designed to be as self-sustaining as possible to minimize the O&M needed to maintain habitat values.

The expected outcomes of the project are native riparian and wetland floodplain complexes along the anadromous fish-bearing streams on the Yakama Indian Reservation. Results will be monitored using HEP to account for the direct mitigation earned toward the construction losses of the Columbia River hydropower system. Specific vegetational, population and hydrologic results will also be monitored at each property to ensure that restoration goals are being met in a cost-effective manner.

Section 7. Project description

a. Technical and/or scientific background.

Background The 1980 Northwest Electric Power Planning and Conservation Act (Power Act) charged the Northwest Power Planning Council (NPPC) to protect, mitigate and enhance fish and wildlife populations that have been impacted by the hydroelectric development in the Columbia Basin. With the passage of the Wildlife Mitigation Rule (NPPC 1989), wildlife issues began to receive the attention necessary to develop and implement mitigation measures.

Lower Columbia Wildlife Loss Assessments Wildlife losses due to inundation have been documented for the Lower Columbia Dams (Rasmussen and Wright 1990 a, b, c, d). Losses were measured using the Habitat Evaluation Procedures (HEP) developed by the U. S. Fish and Wildlife Service (1980). Species used for the loss assessments were chosen on the basis of their ecological, economic, cultural significance, or representation of a cover type or species guild. A total of over 74,000 Habitat Units (HU) attributable to original construction losses were estimated lost for 10 wildlife species within 9 cover types. The inundation loss assessments were subject to an independent audit in 1993 (Beak, 1993). The results of the audit showed that these losses may have been greatly underestimated. HU losses for the operational and cumulative effects of the hydrosystem have not been determined as of this date.

In response to the Wildlife Mitigation Rule and loss assessments, YIN developed a generic mitigation plan (YIN 1991) to partially offset losses previously identified in wildlife impact assessments for Bonneville, The Dalles, John Day, and McNary Dams.

These four dams negatively impacted YIN interests in its Ceded Area and “usual and accustomed places”. Because reservoir conditions and operations limit opportunities for on-site mitigation, YIN chose an off-site mitigation study area in high quality wildlife habitat on the Yakama Reservation. Wildlife restoration activities were planned to occur in watersheds which either contain important anadromous fish production or have restorable runs. Public meetings were held throughout the state at this time to ensure adequate input by agency and local interests.

The YIN mitigation plan (1991) defined the project area in which the restoration activities would occur (Attachment 1). Estimates of the amounts of the various cover types were determined, and a HEP analysis was performed by a multiagency team at multiple locations in the project area representative of each cover type identified in the loss assessments. This data was combined with information regarding land ownership patterns, realty trends and current land usage. It was determined through this analysis that a project totaling approximately 27,000 acres could produce over 25,000 HU credits toward the documented wildlife losses on the lower dams.

With the generic plan and assessment completed at the expense of the YIN, the project was submitted for funding by BPA. In 1992 the project was ranked as one of the highest priority proposals by the Implementation Planning Process (IPP) utilized at the time by BPA and the Columbia Basin Fish and Wildlife Authority (CBFWA). YIN entered into a contract with BPA in 1992 to develop the implementation plan. The implementation plan (YIN 1994) outlines 15 priority areas within the project boundary. These areas were prioritized according to their importance from a wetlands and riparian restorability perspective. Procedures guiding the securing, restoration, adaptive operations and management, and monitoring of the lands within the priority areas were developed. From FY93-FY97 funding of ~\$4.5 million was provided through the Washington Wildlife Agreement with BPA. The majority of the implementation work completed to date is the result of this funding.

Before implementation of the plan could begin, an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) was deemed necessary by BPA to provide further public input into the project. The EA (BPA 1994) was completed, and a Finding of No Significant Impact (FONSI) was signed by the end of FY94. Project implementation began immediately afterward. This project The implementation history is included in Section 7 d. of this proposal.

b. Proposal objectives.

The objectives of this project were originally outlined in the Project Implementation Plan (YIN 1994).

1. Secure available restoration priority area properties (2,000 - 3,000 acres per year).

2. Protect, restore and/or enhance secured lands to realize a net increase in wildlife habitat values.
3. Adaptively manage properties to ensure permanent wildlife habitat value.
4. Monitor wildlife habitat conditions to ensure the desired mitigation level is reached and maintained.

c. Rationale and significance to Regional Programs.

The YIN Riparian and Wetlands Restoration Project is directly tied to mitigating for the losses identified in the FWP resulting from the construction of the Lower Columbia River Hydropower System. This Project has also been instrumental in the design and implementation of a diverse assemblage of plans and programs throughout the Yakima River Watershed. This Project has been the catalyst for the development of regional plans and approaches in the basin as well. The original intent of the Project was to provide a comprehensive vision toward watershed-style restoration not only for the YIN, but also as a guide for other governmental and non-governmental entities in the basin. To this extent the Project has been extremely successful in many ways not measurable by Habitat Units. Additionally, this Project was the first to integrate the wildlife restoration activities with the efforts being spent on anadromous fish, thereby ensuring an interdisciplinary approach to salmonid restoration.

The following paragraphs describe the significance of the Project to the various regional plans and programs:

Yakama Nation Programs and Plans In the Treaty of 1855 between the U. S. Government and the Confederated Tribes and Bands of the Yakama Nation, the area of land known as the Yakama Indian Reservation was reserved by the YIN for the exclusive benefit of its members. The restoration of native wetland and riparian habitats along the anadromous fishery waterways on the Reservation directly benefits the YIN in accordance with the Treaty. To further guide activities conducted by the YIN, the Natural Resources Department of the YIN developed a Land and Natural Resources Policy Plan (1987). The wetlands and riparian restoration project was constructed on this foundation. In 1989 the YIN Wildlife Program contracted with the U. S. Fish and Wildlife Service to develop a YIN Waterfowl Management Plan for the agricultural portion of the Reservation (Meuth, 1989). The waterfowl management plan identified general areas of importance to waterfowl resources along the Yakima River, and Toppenish and Satus Creeks. The Wildlife Mitigation Plan (YIN 1991) immediately followed and built upon this effort. Since the development of the wetlands and riparian restoration project, the YIN has developed several other projects to compliment these activities.

Yakima River Basin Water Enhancement Plan (YRBWEP) The YRBWEP legislation (P.L. 96-182) administered by the Bureau of Reclamation (BOR), is a comprehensive

attempt to restore the agricultural, natural resources and instream flows of the Yakima Basin watershed. All irrigation projects within the Basin are required to develop and implement water conservation plans with water savings directly tied to baseline instream flow goals developed for the basin. The Toppenish Creek Corridor Plan was included in the YRBWEP legislation specifically to build upon and compliment the YIN Wetlands and Riparian Project. The Toppenish Creek Corridor plan is presently in the implementation planning phase. The implementation plan will outline the activities necessary to restore cultural and natural resource values within the Toppenish and Simcoe Creek floodplains within the agricultural portion of the Yakama Reservation.

North American Waterfowl Management Plan The YIN has been an original partner in the development of goals, objectives and plans for activities conducted in the Intermountain West Joint Venture under this international effort to restore continental waterfowl populations. The Joint Venture area is comprised of all the western states between the coastal mountain ranges and the Rocky Mountains. YIN is the lead agency in the Yakima Basin Focus Area, a subset of the Eastern Washington Subregion of the Joint Venture. The Yakima Basin Focus Area Plan identifies the priorities for waterfowl and wetlands restoration in the Yakima Basin. The North American Wetlands Conservation Act (NAWCA) was developed to provide funding for activities associated with the implementation of the Joint Venture Focus Area plans. In 1996 funding (\$~1,000,000) was secured by YIN in accordance with the Yakima Basin Focus Area plan to implement restoration activities on properties along Toppenish Creek and the Yakima River. Wetlands restoration activities are being conducted on properties secured under the YIN Wetlands and Riparian Restoration Project, and on the adjacent Toppenish National Wildlife Refuge (USFWS) and Sunnyside Wildlife Area (Washington Department of Fish and Wildlife, WDFW).

Yakima River Watershed Council The YRWC was established in 1996 to promote and coordinate activities necessary for the restoration and enhancement of the Yakima Watershed. The Yakima River Watershed is an extremely diverse area comprised of many private land and water users; state, local, and federal governmental agencies. The Yakama Reservation is located nearly completely within the watershed. The watershed is completely within the Ceded Area of the YIN. The YRWC was successful in recruiting membership by all of the important water users in the basin. These include all of the irrigation districts; all local, state and federal governmental entities; the YIN; agriculture, timber, recreation, environmental, industry and private citizen interests. In 1997 YRWC, utilizing its diverse membership and the many planning and prioritization activities which have occurred in the watershed, developed a comprehensive plan, the 20/20 Vision For a Viable Future of the Water Resource of the Yakima River Basin (YRWC, 1997) to coordinate and compliment the watershed activities in the basin. Activities of the YIN Wetlands and Riparian Restoration Project are a piece toward the realization of this vision.

Other Programs that have assisted with this effort This Project has worked cooperatively with many other organizations toward the original goal of 27,000 acres of restored wetland and riparian habitat. The following is a list of cooperators and their contributions:

Salmon Corps Program of the Americorps The Yakama Nation has participated in the Americorps effort for several years. Each year the Salmon Corps employs 15-20 young people to work on projects relating to anadromous fish and natural resources restoration. The YIN Salmon Corps have contributed countless hours on the restoration properties within this Project. Fencing, cultural and archaeological preservation, and riparian plantings have been among the many activities the Salmon Corps has been involved in. The labor provided by the Salmon Corps alone has saved this Project tens of thousands of dollars over the past 4 years.

Pheasants Forever The Yakima Chapter of PF has been extremely active in contributing toward the restoration efforts of this Project. In the years before the Wapato Wildlife Area was included into the Project, PF provided funds to pay irrigation fees, and to purchase native grass seed. Nearly all of the native grass seed purchased for this Project is now provided by PF. The overall savings to the project exceed \$200,000 at this point.

Federal Emergency Management Agency (FEMA) FEMA has been cooperating in assistance with flood damage repair resulting from 2 near record flood events that have occurred in the project area during 1996-7. A spillway system was installed on the South Lateral A property in 1996, and the Satus wildlife Area is receiving funds for water control structure replacement this year. Total savings to the project through FEMA funds exceeds \$150,000.

Bureau of Indian Affairs Flood Mitigation Project Funding was secured by the BIA to mitigate potential flood damages which could occur on-Reservation within the project area. The total fund is \$6,000,000. These funds are being spent to restore the flood passage and floodwater-holding capacities of the valley. All activities performed with these funds will directly compliment the activities performed by this Project. Floodplain restoration is a key component to the watershed approach this Project is pursuing.

d. Project history

The background and planning history of the project is included in Sections 7 a and c. This history will include the implementation phase of the Project.

Since the conclusion of the NEPA activities, the Project has secured over 4,000 acres of habitat along Toppenish Creek, Satus Creek, and The Yakima River. The following narrative will outline the activities related to these properties.

Priority Area 1 - South Lateral A This 430 acre property is located along Toppenish Creek. It originally consisted of creek floodplain habitats including emergent marsh, and

three channels of the braided Toppenish Creek. Past agricultural development had removed this property from the floodplain, drained the wetlands, and totally removed the north channel of Toppenish Creek. The property was secured into the Project in 1994. Restoration designs were developed soon after and implementation of restoration activity occurred in the fall of 1995. Restoration included the reestablishment of the north channel of the creek, development of emergent marsh habitat associated with the north channel, and the restoration of floodplain grasslands. Record flooding in early 1996 damaged some of the restoration work. In light of this flood damage, a spillway system was designed and installed in 1996. Funds from FEMA were used to install the spillways (\$~110,000). Another large flood again occurred in January of 1997. Because of the spillway design only \$18,000 of damage occurred. This repair was also funded by FEMA. The return of historic hydrologic conditions and native vegetation has resulted in an immediate wildlife response. Waterfowl production was measured in the spring of 1997. The surveys indicated some of the densest production recorded in the valley. Summer waterfowl banding activities captured over 400 mallards on the property in July and August. Other species of note which have been extensively using the property for nesting include long-billed curlews, and black-necked stilt. Sandhill cranes, peregrine falcons and bobolinks have also been observed on the property during the nesting season. Great basin wild rye plantings on over 150 acres of the property will provide nesting cover for many species of wildlife within 2-3 years.

Priority Area 2 - Satus Wildlife Area This property, located at the confluence of Satus Creek and the Yakima River, is comprised of 3,100 acres. Unlike the South Lateral A property which had been heavily disturbed in the past, the Satus Wildlife Area's landscape has been relatively unaltered from native conditions. The property represents some of the highest quality oxbow slough wetland and gallery riparian forest habitats on the Yakima River. Historical land use was limited to intensive cattle grazing. The property was secured in 1995. The site-specific management plan reduced the cattle allotment by 75%, and incorporated cattle into a rotational system that is designed to be used as a tool for restoration. Wetland restoration planning is occurring in FY98. Restoration will consist of water control structure replacement, not landscape alteration. Wetland restoration activities are being funded through the NAWCA project described above with some FEMA funds used for water control structure purchases. Vegetation restoration and replanting began in 1997, but the majority of this work will occur after the wetlands restoration is completed. Broad, flat meanderbelt areas such as this are nearly nonexistent along the Yakima River. This property is among the best examples of this landscape type in central Washington. The wildlife diversity is equally represented on the property.

Priority Area 3 - Wapato Wildlife Area This property, located along the Yakima River north of the city of Wapato, is comprised of 660 acres of braided Yakima River habitat, gallery cottonwood forest, and grassland areas which had been converted to agriculture in the early part of the century. Restoration of this property is complete as of 1997. Most of the restoration consisted of reestablishing great basin wild rye grasslands and natural hydrology on the converted farmland (~160 acres). The riparian areas have been

protected from grazing and are relatively undisturbed. Hydrologic restoration of the converted agricultural areas has resulted in young cottonwood and willow recolonization.

Priority Area 4 - Lower Satus Creek Funding secured in FY98 is being targeted toward the inclusion of this area into the Project. The Lower Satus Creek unit consists of approximately 2,300 acres of floodplain habitat in the west portion of the Satus Valley. This portion of Satus Creek was once comprised of a multiple-channeled riparian/wetland complex. Past activities have resulted in channel simplification in this area. Today only one channel remains; downcut through years of abuse. Restoration of channel complexity can be accomplished through reconnection of the old channels as many of the landscape features remain. This property also provides the link between this Project and the Satus Creek Watershed Project (see Section 8) being implemented throughout the non-agricultural portion of the Satus Creek watershed.

Other Pending Opportunities Presently the planning for the FY99 land securing activities is being conducted. Expansion of the Satus Wildlife Area into Priority area 10 (~500 acres) and into Priority Area 5 (~1,000 acres) is near completion. A 2,000 acre property between Priority Areas 12 and 15 is near completion. NAWCA funds and BIA flood mitigation funds will be used for the restoration activities planned on this area. Other acreages are nearly secured in Priority Areas 11, 13, and 7. Present funding for inclusion of all of these properties is presently inadequate. The sooner the funds become available, the sooner these properties can be permanently secured. Temporary leases or easements will be used to hold the properties pending future funding.

e. Methods.

The following methods have been described in detail in the YIN Project Implementation Plan (YIN 1994) and the Project Environmental Assessment (BPA 1994). These methods have been successfully applied since Project implementation began in 1994.

Task 1.a - Determine Land Ownership Land ownership within all Priority Areas was completed in the predesign planning activities during 1993. YIN, BIA and Yakima County records were used to complete this task.

Task 1.b - Secure lands in perpetuity All lands included in the Project are dedicated to wildlife management in perpetuity. This is accomplished through a Government to Government document between YIN and BPA for each property inclusion. The actual securing of the lands which leads to the Government to Government agreement depends on the original ownership of the property in question. If the parcel is owned in Fee Title by an entity other than YIN, Fee purchase of the property is required. Federal appraisals are used to ensure cost-effectiveness. If the parcel is held in Trust for an individual Yakama Tribal member, the property can be purchased or a long-term lease can be utilized depending on the cost comparison between the 2 methods and the desires of the landowners. If the property is held in Trust for the Yakama Nation, an easement for the assessed purchase price of the property, or a long-term lease can be used depending on

the cost-effectiveness of the action. Cost effectiveness of purchase/easement versus long-term lease is measured by comparing the purchase price of the property to the development of a perpetual trust fund the interest from which will be used to pay annual lease dues. Currently the trust fund approach has reduced the land securing cost of Tribal land by 50% compared to the purchase price of the properties.

Task 2.a - Site-specific Restoration Plans After a property is secured, a site-specific restoration plan is developed. This document guides the restoration activities on the property. The planning process includes cultural and archaeological surveys to ensure that these resources are protected or enhanced when possible. Historical information is used to obtain an indication of predevelopment conditions. Land disturbing activities are only used on areas that have been altered in the past to such an extent that earth moving is needed to return the functional processes necessary for habitat restoration. Engineering surveys and designs are developed at this stage if the plans call for landscape alteration. Vegetation plantings or restoration activities are usually identified at this time, however they may be changed according to the implementation of the restoration activities. All restoration plans are subject to interdisciplinary review by the Natural Resource Programs of YIN.

Task 2.b - Implement Site-specific activities Engineered plans have been contracted to Ducks Unlimited (DU) on certain projects. These projects include those that require intensive engineering. DU-engineered projects include the survey, design and implementation of the earth work. Less intensive plans are completed by the YIN habitat restoration technicians and the Salmon Corps crew. These activities include water control structure placement, fencing, vegetation restoration, and small earth work operations. Restoration of each property is designed to result in simple, cost-effective management.

Task 3.a - Site-specific O&M Plans These plans are developed after the restoration activities are completed. They include annual schedules for vegetation or water manipulation, fence repair, or other annual activities necessary to maintain the habitat benefits realized by the restoration activities. O&M activities are designed to be as nonintrusive as possible because these activities can often cause disturbance to the wildlife populations.

Task 3.b - Manage habitats according to O&M plans Habitat crew meetings are conducted biweekly to set schedules and plan activities. Because the properties are often separated from each other by several miles, coordination among crew members and property activities is paramount. A well organized O&M schedule can save money and time.

Task 3.c - Adjust management according to monitoring results O&M activities are only as good as the habitats they are maintaining. Feedback from habitat crew members regarding the success or failure of certain activities is an important component of management. The results of habitat and population monitoring activities described in

Task 4 are used to adjust annual O&M activities. Flexibility in management is critical when managing dynamic habitats such as wetlands and river corridors.

Task 4.a - Baseline HEP After each property is included into the Project, but before the initial restoration activities have begun, a baseline HEP analysis is performed to measure the initial habitat acreages and values. To facilitate the accounting of mitigation achieved, cover types and species used match those used in the Columbia River Loss Assessments (Rasmussen and Wright 1990a,b,c,d). Future benefits due to restoration and O&M activities will be compared to the baseline HEP analyses.

Task 4.b - Site-specific habitat response monitoring The site specific restoration plans contain habitat goals to be achieved through restoration and O&M activities. The progress toward these goals will be monitored annually. Methods employed will vary according to habitat type and property. Habitat type acreage, vegetation composition, hydrologic characteristics necessary to maintain specific habitats, grassland density and height, cavity availability and riparian vegetation health are examples of parameters measured. All habitat monitoring is specifically tied to restoration goals and future management. Specific habitat monitoring surveys are being developed as a part of the FY98 activities.

Task 4.c - Wildlife use of habitats Because this Project is designed to restore habitat types inundated by the construction of the Columbia River hydropower system, wildlife population monitoring is not as high a priority as habitat monitoring. The restoration of habitats, however, is much less meaningful if not put in a wildlife population perspective. To date, most wildlife monitoring has consisted of waterfowl production, migration and wintering surveys. Non-waterfowl species are recorded during spring and summer duck production surveys. Waterfowl summer banding activities are conducted to determine survival rates and migrational areas for locally-produced ducks. Migration and wintering surveys are conducted using a fixed-wing aircraft monthly from October through February. Non-waterfowl surveys are being developed as a part of the FY98 activities.

f. Facilities and equipment.

The YIN employs one of the largest tribal natural resources programs in the nation. Office space, administrative support and facilities available are extensive. Ground moving equipment such as bulldozers, front-end loaders, backhoes, graders and dump trucks are available from the YIN wildlife, roads, and facilities management programs. Vegetation restoration equipment including tractors, seeders, mowers, discs, and sprayers are available from the YIN wildlife, weed control and facilities management programs. Equipment that is used rarely or that is too large to justify from a cost-effective perspective is leased or the activities are contracted.

g. References.

BeakConsultants, Inc. 1993. Audit of wildlife loss assessments for Federal dams on the Columbia River and its tributaries. Proj. No. 73485, Prepared for Northw. Power Plan. Coun., Portland, Ore. 70 pp.

Bonneville Power Administration. 1994. Lower Yakima Valley wetlands and riparian restoration project final environmental assessment, DOE No. 0941. 58pp.

Meuth, J. 1989. Yakima Indian Nation waterfowl management plan. Prepared by the U. S. Fish and Wildlife Service for the Yakama Indian Nation. 190pp.

Northwest Power Planning Council. 1989. Wildlife mitigation rule and response to comments. Publ. No. 89-35.

Rasmussen, L., and P. Wright. 1990a. Wildlife impact assessment, Bonneville Project, Oregon and Washington. U. S. Fish Wildl. Serv., Portland, Ore. 37pp.

_____. 1990b. Wildlife impact assessment, John Day Project, Oregon and Washington. U. S. Fish Wildl. Serv., Portland, Ore. 27pp.

_____. 1990c. Wildlife impact assessment, The Dalles Project, Oregon and Washington. U. S. Fish Wildl. Serv., Portland, Ore. 24pp.

_____. 1990d. Wildlife impact assessment, McNary Project, Oregon and Washington. U. S. Fish Wildl. Serv., Portland, Ore. 28pp.

U. S. Fish and Wildlife Service. 1980. Habitat evaluation procedures (HEP). Ecol. Serv. Manual 102. Div. Ecol. Serv., Washington, DC.

Yakama Indian Nation. 1991. The Yakama Indian Nation wildlife mitigation plan. YIN Wildlife Resour. Manage., Toppenish, Wash. 62pp.

_____. 1994. Yakama Indian Nation lower Yakima Valley wetlands and riparian restoration project predesign plan. Prepared for Bonn. Power Admin., Proj. No. 92-62.

Yakima River Watershed Council. 1997. A 20/20 vision for a viable future of the water resource of the Yakima River Basin. Publ. by YRWC., Yakima, Wash.

Section 8. Relationships to other projects

Section 7 contains information pertaining to the extensive coordination and cooperation this Project employs with YIN and other programs and planning efforts. The following information will relate to the FWP activities related to this project.

Satus Watershed Restoration (9603501) The Satus Watershed is located totally within the boundaries of the Yakama Reservation. This watershed is responsible for up to 50%

of the wild steelhead production in the Yakima Basin. This project has the ability to conduct watershed restoration literally from the headwaters to the mouth of the creek. All creek diversions have been halted. Over 190,000 acres of rangeland has been rested to allow for upland vegetation restoration and repair of sediment sources. The floodplain area has been fenced to allow for riparian shrub and forest restoration. This restoration effort will be used as a pattern for other restoration efforts on the Yakama Reservation and elsewhere. The YIN Wetlands and Riparian Restoration Project is adjacent to this project in that the Watershed project begins at the headwaters and continues through the rangeland to the west end of the agricultural portion of the watershed. This Project includes the watershed within the agricultural area for 10 miles to the mouth of the creek.

Yakima/Klickitat Fisheries Project (8812001) This Project will compliment the activities of the YKFP by providing habitat restoration within the waterways served by the YKFP. The YKFP goal of enhanced anadromous fish production in the Yakima Basin is dependent upon a return to normative river systems. This Project provides a piece of the puzzle toward such a system in the Yakima Basin.

Upper Toppenish Creek Watershed Analysis (New FY98 Proposal) Like the Satus watershed, the Toppenish Creek watershed is located totally within the Yakama Reservation. The 2 watersheds combined make up 20% of the Yakima Basin land base. Also like the Satus Watershed Restoration Project, this project is designed to restore the watershed from the west end of the agricultural area to the headwaters. Again total headwaters to mouth restoration will be possible with the combined projects.

Yakima Basin Environmental Education (9405900) This project provides school children with environmental education opportunities. Its success is known throughout the Northwest. The governor of the state of Washington highlighted this project in his state of the state address in January of 1998. Wetlands science training for the teachers in the education project is conducted annually by the staff, and at the property locations, of this Project.

Section 9. Key personnel

Tracy Hames - Project Manager

Master of Science in Natural Resources, 1990

Univ. Wisconsin - Stevens Point

Bachelor of Arts, 1984

Macalester College, St. Paul, Minnesota

Employed by YIN since 1989

Don Larsen - Habitat Restoration Biologist

Master of Science in Fisheries and Wildlife Science, 1992

South Dakota State Univ.

Bachelor of Science, 1990
Univ. of Nebraska - Lincoln

Employed by YIN since 1993

Dr. Gordon Lothson - Archaeologist
Ph.D. in Anthropology, 1989
Washington State Univ., Pullman
Master of Science in Anthropology, 1972
Univ. of Minnesota
Bachelor of Arts, 1966
Univ. of Minnesota

Employed by YIN since 1993

Section 10. Information/technology transfer

Information and results of the activities resulting from this project are shared with all of the projects and entities referred to in this proposal. An important component of this Project is to gain knowledge of habitat and watershed restoration techniques and approaches that can be utilized in other contexts. Presentations at symposiums have occurred in the past and are scheduled in FY98 at the National Native American Fish and Wildlife Society's annual meeting in North Carolina. Wetland restoration in the Yakima Basin, as well as in much of the arid west, is a relatively new concept. Much is being learned as this Project continues its work. This information is continuously being shared with interested tribes, agencies and private citizens. The Yakima River Watershed Council as well as the local school system (ESD 105) aid in the dissemination of this information to promote Yakima watershed restoration activities.